Sheth, Gary

From: John Barth <barthlawoffice@gmail.com>
Sent: Friday, September 18, 2015 1:22 PM
To: Sheth, Gary
Cc: mike@sanjuancitizens.org; Michael Saul; tmckinnon@biologicaldiversity.org
Subject: Comment letter- Navajo Mine draft reissued NPDES permit
Attachments: Navajo Mine Final NPDES Comment Letter 09182015.pdf; EPA APS CWA Notice Letter 04302014.pdf; EPA comments on FCPP Navajo Mine Energy Project DEIS.pdf

Mr. Sheth

Attached please find comments by San Juan Citizens Alliance and Center for Biological Diversity on the draft reissued NPDES permit for the Navajo Mine. Also attached are exhibits to the comment letter.

Please acknowledge receipt of this email and the attachments. Thank you,

--
John Barth
Attorney at Law
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LAW OFFICE OF
JOHN M. BARTH

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September 19, 2015

By email to: Sheth.Gary@epa.gov
Gary Sheth
U.S. Environmental Protection Agency, Region 9
Water Division, NPDES Permits Section WTR 2-3
75 Hawthorne Street
San Francisco, CA 94105

Re: Comments by San Juan Citizens Alliance and Center for Biological Diversity on NPDES draft permit No. NN0028193, NTEC Navajo Mine.

Dear Mr. Sheth:

Thank you for alerting me to the issuance of the draft NPDES Permit for the NTEC Navajo Mine ("draft permit"). On behalf of San Juan Citizens Alliance (SJCA) and Center for Biological Diversity ("CBD"), we are submitting the following comments on the draft permit.

1. **Status of Issuance of Four Corner Power Plant NPDES permit**

The Fact Sheet for draft permit indicates that the Navajo Mine permit was last reissued by EPA on March 5, 2008, was set to expire on April 13, 2013, and was administratively extended as the result of a timely renewal permit application submitted on October 2, 2012.

While we are pleased that EPA is updating the Navajo Mine permit in a relatively prompt timeframe, we remain concerned with the unreasonable delay in the reissuance of the related Four Corners Power Plant NPDES permit. As you know, these two permits are related because the Navajo Mine provides the coal that is burned at the neighboring Four Corners Power Plant. The last time the Four Corners Power Plant NPDES was reissued by EPA was on April 3, 2001. Thus, it has been nearly 15 years (or 3 five-year permit cycles) since EPA Region 9 has updated the Four Corners Power Plant NPDES permit. On May 16, 2014, SJCA and CBD issued a notice of intent to sue EPA for its unreasonable delay in issuing the Four Corners Power Plant (FCPP) NPDES permit. See attached. While EPA subsequently issued a draft reissued permit on November 13, 2014, and a coalition of conservation organizations submitted comments on February 18, 2015, EPA has yet to issue a final renewal permit for the facility. Please promptly issue the final NPDES permit for the Four Corners Power Plant.

2. **Differentiation of responsibility of discharges/impacts**

As noted in EPA's Fact Sheet, some of the discharges and impacts from the Navajo Mine cross into the Four Corners Power Plant lease area. In addition, the Fact Sheet states that coal combustion byproducts (CCB) from the Four Corners Power Plant have been disposed of on the Navajo Mine, but then states "[t]he disposal of all CCB material produced by FCPP is the responsibility of the Arizona Public Service Co. ("APS")." Given the interrelationship of the discharges and sources of pollution between the Navajo Mine and the Four Corners Power Plant, we request that APS be listed as an additional "permittee" under this permit because it is responsible for potential discharges of CCB into receiving waters. Likewise, we request that NTEC and/or BHP be included as additional permittees under the Four Corners Power Plant NPDES permit because they contribute discharges to receiving waters located within the FCPP lease area.

3. **The Permit Should Regulate Discharges of CCB**

EPA's Fact Sheet acknowledges that extensive CCB materials from the FCPP have been disposed of in unlined mine pits located on the Navajo Mine. In comments on the Draft Environmental Impact Statement (DEIS) for the FCPP/Navajo Mine complex, EPA stated,

> " Contamination from coal combustion residue (CCR) placed at the Navajo Mine has leached, and will continue to leach, directly into groundwater of the Fruitland Formation coal seams and the Pictured Cliffs Sandstone Formation. The DEIS acknowledges "high levels of chemical constituents of concern exist within the wells in the historic mining area" (p. 4.5-44). The DEIS concludes, however, that "Thus far, negligible impacts have resulted from the CCR placement. It is also unlikely that any significant future effects will ensue from the CCR placement at the Navajo Mine because of the very slow groundwater movement and the likely attenuation of contaminants of concern as they migrate through the subsurface" and that "Therefore, past CCR placement at the Navajo Mine is determined to have no impact in the short- or long-term" (p. 4.5-14). Elsewhere it states that the potential impacts to current and future water uses from CCR placement at the Navajo Mine are minor (p. 4.5-44), despite the identified major impacts for pH, boron, selenium, fluoride and sulfate (p. 4.5-44), with concentrations of boron, fluoride, sulfate, and total dissolved solids (TDS) exceeding the criteria for livestock watering, a designated post reclamation land use. These conclusions, especially that of "no impact", do not appear to be supported. The modeling assumption that contaminants would be attenuated as they migrate through the subsurface has not been confirmed. Additionally, the assumption that pollutants would be diluted by the larger San Juan River groundwater flow, even if they are not attenuated during transport to the Fruitland Formation, is brought into question since the transport modeling and sampling that occurred seems to have not fully recognized the possibility of a significant vertical (fracture) flow in the Fruitland Formation. The DEIS indicates that the general flow direction of groundwater in the Fruitland Formation is downward through the interbedded shale and coal units to the lower strata of the Fruitland Formation, with marginal upward movement from the Pictured Cliffs Sandstone into the Fruitland Formation (p. 4.5-13). One can infer from the

vertical flow directions that fracture flow might play a prominent role in the movement of bedrock groundwater in the FCPP area. This parameter was not considered in the groundwater modeling of the FCPP area. If vertical (and lateral) fracture flow is substantial, the assumed attenuation would not occur because fracture flow results in a much smaller residence time of groundwater in the bedrock formations and a limited opportunity for the contaminants to be adsorbed by bedrock clay. This would lead to a potentially larger groundwater impact downgradient of CCR placement than is predicted in the DEIS. The DEIS is not clear whether any ongoing groundwater or surface water monitoring would occur as a condition of this project. The DEIS seems to indicate that only groundwater and surface water monitoring that are part of the new SMCRA permit groundwater monitoring plan (originally from BHP Navajo Coal Company, but which the Navajo Transitional Energy Company will implement) would occur, which relates to the new mine areas and the Pinabete and Cottonwood arroyos. It does not specify any monitoring of the historic contamination areas nor confirm that contaminated groundwater is not reaching the San Juan or Chaco River surface water or alluvia. Recommendation: The FEIS should include additional information to support its groundwater and surface water impact assessment conclusions. We recommend that monitoring of groundwater quality at Areas I and II of the Navajo Mine and the San Juan River alluvium occur to confirm the model predictions that constituents of concern would be attenuated as groundwater travels towards the San Juan River and the Chaco River. Because the groundwater of the Fruitland and Pictured Cliffs Sandstone formations that enter into the alluvium also discharges into the San Juan River in the area of the Navajo Mine, monitoring of the San Juan River surface water quality upstream, along the mine reach, and downstream should occur if the groundwater monitoring results identify elevated levels of pollutants in the San Juan River alluvium that exceed Navajo Nation Water Quality Standards. In addition, the baseline groundwater quality should be clarified. The DEIS summarizes baseline results for Cottonwood, Pinabete, and No Name Arroyo alluvial wells in Table 4.5-5; however the presentation of this information is not useful. EPA previously commented that this summary does not allow an assessment of ground water impacts by source, and we recommended including some monitoring results by well in the DEIS. In addition, the identification/location of these baseline wells is of importance in order to confirm they do, indeed, represent baseline conditions and do not include contamination that is related to past CCR disposal. This information should be included in the FEIS." EPA DEIS Comment Letter dated June 26, 2014 attached hereto.

In light of EPA's comment letter, it is clear that the Navajo Mine CCR mine pits are, or may be, a point source of pollution to the San Juan River and/or its tributaries that must be regulated under this NPDES permit. Please regulate these CCR mine pit point sources in this permit, include appropriate monitoring for a vast array of constituents from the CCR mine pits, and impose TBELs and WQBELs.

4. **EPA's Approval to Discharge From 26 New Outfalls is Premature**

EPA's Fact Sheet for the reissued Navajo Mine NPDES permit correctly states that "[a]n approved mine plan revision for Area IV North was vacated on April 6, 2015 by the U.S. District

Court for Colorado pending further analysis under NEPA by the Office of Surface Mining Reclamation and Enforcement (OSM)." Fact Sheet, p. 1. As such, NTEC is not presently authorized to mine in Area IV North. EPA's Fact Sheet also states NTEC's NPDES renewal permit application seeks authorization to discharge from 26 new outfalls, many of which are located in proposed mining area Area IV North. *See also* FCPPNM BiOp 107. However, EPA has not provided a map showing the location of each proposed new outfall and which outfalls are located in Area IV North. We suggest that EPA provide such a map prior to finalizing the permit for the Navajo mine.

EPA's draft permit proposes to approve discharge from as many as 26 new outfalls located in unapproved mining areas. EPA is putting the cart ahead of the horse. Since NTEC is not authorized to mine in Area IV North, it is arbitrary and capricious for EPA to authorize discharges from mining activities in this unapproved proposed mining area. Stated another way, EPA may only authorize mining related discharges in areas that are approved for mining. Accordingly, we ask EPA to remove from the final permit all authorizations to discharge from outfalls located in unapproved mining areas, including but not limited to Area IV North. If NTEC ever receives authorization to mine in this new area, it can reapply to EPA for authorization to discharge at that time.

5. **EPA Should Release the November 22, 2013 MMCo Letter**

EPA's Fact Sheet states that NTEC submitted a letter dated November 22, 2013 in which BNCC identified 10 corrective actions to be taken pursuant to the facility's MSGP and that it would "meet all requirements of the 2008 MSGP and the Memo (9/27/13 EPA Giles Guidance Memo) and will notify the EPA NPDES permitting authority prior to the discharge of any storm water associated with industrial activity." We ask that EPA make publicly available the November 22, 2013 letter, the related 2012 inspection report, and identify any corrective actions that remain to be implemented. Moreover, as stated above, EPA may not authorize any discharge of storm water from industrial activity is areas that have not received authorization for mining.

6. **EPA Should Not Rely on the April 8, 2015 BiOp**

Section 7(a)(2) of the Endangered Species Act requires that

> Each Federal agency shall, in consultation with and with the assistance of the Secretary [of Commerce or the Interior], insure that any action authorized, funded, or carried out by such agency ... is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined . . . to be critical, unless such agency has been granted an exemption for such action . . . pursuant to subsection (h) of this section.

16 U.S.C. § 1536(a)(2). Section 7(a)(2) imposes two obligations upon federal agencies. The first is *procedural* and requires that agencies consult with the FWS to determine the effects

of their actions on endangered or threatened species and their critical habitat. *See* 16 U.S.C. § 1536(b). The second is *substantive* and requires that agencies ensure that their actions do not jeopardize endangered or threatened species or their critical habitat. *See* 16 U.S.C. § 1536(a)(2); *see also, Florida Key Deer v. Paulison,* 522 F.3d 1133, 1138 (11th Cir. 2008).

Issuance of a (discretionary) NPDES permit is plainly a federal action subject to the requirements of ESA section 7, and compliance with the substantive minimum requirements of the CWA does not, in and of itself, necessarily satisfy the independent substantive requirements of ESA Section 7(a)(2). *See National Association of Home Builders v. Defenders of Wildlife*, 551 U.S. 644, 666-68 (2007) (CWA, ESA, and implementing regulations require consultation and jeopardy determination for discretionary permit issuance).

EPA acknowledges the presence of seven listed species present within the immediate area of the outfalls. Fact Sheet 9-10. It then proceeds to rely upon, for compliance with ESA Section 7(a)(2), "the Biological Opinion issued by USFWS on April 8, 2015, which considers the entire Four Corners Power Plant and Navajo Mine Energy Project Proposed Action, including explicitly the U.S. EPA's action on this NPDES Permit NN0028193." Fact Sheet 10. As detailed below, reliance on the Biological Opinion for the Four Corners Power Plant and Navajo Mine Energy Project ("FCPPNM BiOp") is invalid to satisfy EPA's obligations to determine the effects of its actions on listed species and critical habitat and to ensure those actions do not jeopardize the species or adversely affect critical habitat.

The FCPPNM BiOp briefly discusses this proposed action under the heading "Effects of Stormwater Runoff, Point Source, and Other USEPA Authorized Discharges." FCPPNM BiOp 107-109. Its analysis does not appear to distinguish Navajo Mine discharges from FCPP operational discharges, but considers them collectively. It addresses two bioaccumulative toxic pollutants, mercury (Hg) and selenium (Se) that are causes of serious behavioral, reproductive, and other impairment to the listed Colorado pikeminnow and razorback sucker. *See* FCPPNM BiOp 72-103, 116-119. The BiOp addresses NPDES-permitted outfalls under the assumption that "a PQL [Practical Quantification Level] for Se of 1 ug/L and a PQL for total Hg of 0.0002 ug/L will be used." FCPPNM BiOp 108.[1] Assuming these limits on EPA-authorized discharges of Se and Hg, the BiOp concludes that:

> Using the PQLs and the bioaccumulation factors (BAF) provided in the BA (OSMRE 2014, page 6-18) for Se (BAF = 485 L/mg), we expect Se in whole body razorback suckers and Colorado pikeminnow to increase to approximately 2.4 mg/kg wet weight and their egg Se concentrations would increase to 13.6 to 19.4 mg/kg DW resulting in an increase in egg mortality ranging from 4 to 5 percent. Using the PQL for Hg and the BAF provided in the BA (OSMRE 2014, page 6-18) for total Hg (BAF = 3,520), we expect Hg in whole body razorback suckers and Colorado pikeminnow to be approximately 0.1 mg/kg wet weight and therefore, associate a 2.8 percent reproductive injury and a 0.5 percent survivorship injury (Table 8). *We conclude that in both cases, the PQLs used in*

[1] Practical Quantification Levels constitute the "numerical result considered accurate" by EPA; the BiOp indicates that they may be used in cases where the applicable water quality standard is below the PQL. FCPPNM BiOp 107.

the NPDES permits or discharges of Hg and Se would be associated with a wide range of adverse effects to the Colorado Pikeminnow and razorback sucker and their designated critical habitat.

FCPPNM BiOp 108-109 (emphasis added). Thus, the BiOp finds significant adverse effects on the Colorado pikeminnow and razorback sucker, and their designated critical habitat, from what it assumes to be effluent limits of 1 ug/L for selenium and 0.0002 ug/L for mercury. BiOp 108.[2]

EPA's reliance on the FCPPNM BiOp to satisfy its Section 7(a)(2) obligations with regard to the Navajo Mine NPDES permit is invalid for the simple reason that the FCPPNM BiOp assumes effluent limitations and/or monitoring not present in the draft permit. The draft permit contains no effluent limitations for either mercury or selenium, *see* Draft NPDES Permit No. NN0028193 at 3-5 Tables A-1 and A-2, and does not even contain a monitoring requirement for mercury. This lack of even a monitoring requirement for mercury appears to contradict the BiOp's assumption that "We therefore expect that NPDES permits identifying outfalls with the potential to discharge Hg will provide monitoring data for Hg using Method 1631E or another sufficiently sensitive EPA-approved method," BiOp 107. Without even monitoring for mercury from the outfalls, it is impermissible for the NPDES permits to rely on the BiOp's assumption that their mercury contribution will be less than 0.0002 ug/L. If the BiOp's assumptions regarding maximum mercury loading are unsupported by permit terms, its conclusions regarding reproductive and survivorship injury are similarly unsubstantiated, and clearly inconsistent with the ESA's requirement to utilize best available science.

Relying on the FCPPNM BiOp to establish ESA compliance for the Navajo Mine's water outfalls is also inappropriate because the BiOp improperly excludes all consideration of the cumulative effects of selenium loading from the Navajo Indian Irrigation Project ("NIIP").[3] The NIIP is a major source of selenium loading in the San Juan River system, *see* Bureau of Indian Affairs, Navajo Indian Irrigation Project Biological Assessment (June 11, 1999). Selenium is in turn a major source of bioaccumulative toxicity to fish, particularly at the ovary, egg, and fry stage. FCPPNM BiOp 99-103. Baseline selenium levels in the San Juan Basin are already sufficiently elevated to cause reproductive and other harm to the Colorado pikeminnow and razorback sucker. BiOp 98. The BiOp acknowledges that, discounting all NIIP contributions, selenium from FCPP and Navajo Mine will harm "as many as 25,503 Colorado pikeminnow eggs/ovaries and 291,510 razorback sucker eggs/ovaries," and that critical habitat will be adversely affected by the project's added selenium deposition. BiOp 119. Any conclusion that the population-level effects of Navajo Mine selenium discharge will not jeopardize razorback

[2] The BiOp ultimately concludes that, assuming offsetting effects of Conservation Measures associated with the project, the overall FCPP/NM project will not jeopardize the continued existence of the Colorado pikeminnow and razorback sucker. BiOp 135. Although this conclusion and its underlying assumptions are seriously flawed, for the reasons set forth herein, EPA reliance on the FCPP BiOp for NPDES permit Section 7 compliance is impermissible even assuming the validity of the BiOp's ultimate conclusions.

[3] BiOp 14-15 ("Additionally, BIA has agreed to reconsider its effects findings associated with the Navajo Indian Irrigation Project (NIIP) and other irrigation projects. BIA has begun developing additional scientific information that may be necessary to supplement their BA (BIA 1999). Therefore, potential future Se discharges potentially from BIA irrigation projects and associated effects to listed species were not considered part of cumulative effects during this ESA consultation.")

sucker or critical habitat, however, is invalid if it declines to consider the contribution of one of the basin's largest selenium sources, runoff from the NIIP. The BiOp acknowledges that, in the future, NIIP "use of San Juan River water is expected to approximately double." BiOp 63. The FCPPNM FEIS similarly acknowledges "if increased water is required for agricultural uses, it could result in increased runoff of pesticides and selenium from agricultural return flows." Four Corners Power Plant and Navajo Mine Energy Project Final Environmental Impact Statement 4.18-45 (May 2015). Yet the BiOp explicitly excludes consideration from cumulative effects of any potential future discharges from BIA irrigation projects. The explicit refusal to consider these reasonably foreseeable contributions to San Juan Basin selenium loads from BIA actions contravenes the ESA's mandate to utilize best available science.

Finally, reliance on the FCPPNM BiOp is inappropriate because it omits any consideration of a significant new event and significant new information that post-dates that BiOp – the release of large quantities of pollutants from the Gold King Mine into the Animas River and from there into the San Juan River, its sediments, and its biota. EPA states "we will be evaluating long-term impacts associated with exposure to the plume and the impacts of deposited sediments over time. EPA will be working with the States of Colorado, New Mexico and the Navajo Nation to evaluate these and other ecological impacts as we move forward." US EPA, Frequent Questions Related to Gold King Mine Response, available at *http://www2.epa.gov/goldkingmine/frequent-questions-related-gold-king-mine-response* (last visited Sept. 18, 2015). The FCPPNM BiOp, predating the Gold King release, contains no consideration of the effects of acidity, metals, or other toxins on water quality, sediment, invertebrates, or fish stemming from either the initial Gold King release or its continuing discharge of contaminated water. Without additional analysis of the effect of this substantial new information on water quality and toxin concentrations in fish and invertebrates, reliance on the April FCPPNM BiOp fails to meet the ESA's mandate to utilize the best available science.

Thank you for the opportunity to submit comments.

Sincerely,

s/ John Barth

John Barth

s/ Michael Saul

Michael Saul
Center for Biological Diversity

cc: Mike Eisenfeld, SJCA

LAW OFFICE OF
JOHN M. BARTH

P.O. BOX 409 HYGIENE, COLORADO 80533 (303) 774-8868 BARTHLAWOFFICE@GMAIL.COM

May 16, 2014

CERTIFIED MAIL/RETURN RECEIPT REQUESTED

Gina McCarthy
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Salt River Project
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El Paso Electric Company
P.O. Box 982
El Paso, TX 79960

To whom it may concern:

On behalf of San Juan Citizens Alliance ("SJCA"), 1309 E. 3rd Ave. Suite B-3 Durango, Colorado 81302 970-259-3583 and Center for Biological Diversity ("the Center"), 351 California Street, Suite 600, San Francisco, California 94104 (415) 436-9682, I am providing notice, under Section 1365 and 1369(b) of the Clean Water, 33 U.S.C. §§1365,1369(b) and 40 C.F.R. Part 135, of intent to sue either the U.S. Environmental Protection Agency ("EPA") and/or Arizona Public Service ("APS"), Tucson Electric Power, Public Service Company of New Mexico, Salt River Project, and El Paso Electric Company for the legal violations identified herein.

Background

This notice letter pertains to the Four Corners Power Plant ("FCPP") located on the Navajo Nation. Arizona Public Service Company is the operator, and partial owner of, the FCPP. The other partial owners of the FCPP are: Public Service Company of New Mexico

(PNM), Salt River Project ("SRP"), Tucson Electric Power ("TEP") and El Paso Electric Company. EPA Region 9 is the Clean Water Act permitting authority for the FCPP because it is located on Indian lands. On April 3, 2001 EPA Region 9 issued the most recent NPDES permit for the FCPP, which is NPDES Permit No. NM0000019.[1] The permit became effective on April 7, 2001 and expired on April 6, 2006. To date, EPA has not issued a renewal NPDES permit for the FCPP.

The original application for a renewal permit was submitted in late 2005, followed subsequent updates to the application. Exhibit 1 hereto. On October 30, 2012, EPA Region 9 acknowledged that "much time has elapsed since [APS] submitted the original application for renewal" and EPA requested an updated application. *Id.* EPA indicated at that time that it "plans to draft and issue a renewed NPDES permit for the APS Four Corners Power Plant in 2013." *Id.* APS submitted a revised permit application on February 15, 2013. Exhibit 2 hereto. On February 19, 2013, EPA stated that it would "draft a proposed renewed NPDES permit within 6 months" after receiving the revised application. Exhibit 3 hereto. It has been over 14 months since EPA received APS's revised NPDES permit application and EPA has not issued a proposed renewal permit for public comment.

Claims against EPA

SJCA and the Center claim that EPA has unreasonably delayed issuing a National Pollutant Elimination System Permit. Alternatively, SJCA and the Center claim that EPA's attempt to administratively extend Permit NM0000019 beyond the statutorily-limited 5 year term is illegal and renders the permit void by operation of law.

EPA's failure to timely issue a renewal NPDES permit for the FCPP constitutes an unreasonable delay for rendering its decision under the Administrative Procedures Act, 5 U.S.C. § 558(c). It has been over 8 years since NPDES Permit No. NM0000019 has expired and 13 years since an NPDES permit for the FCPP has been issued by EPA. This delay by EPA is arbitrary, capricious, and/or unreasonable under the law.

Alternatively, Congress has determined that NPDES permits may only be issued "for fixed terms not exceeding five years." 33 U.S.C. § 1342(b)(1)(B). EPA's permit program "shall be subject to the same terms, conditions, and requirements as apply to a State permit program and permits issued thereunder" including the maximum 5-year term. 33 U.S.C. § 1342(a)(3). It follows that EPA does not have the statutory authority to administratively extend an NPDES permit beyond the statutory 5-year time period. *ONRC Action v. Columbia Plywood, Inc.*, 286 F.3d 1137, 1146 (9th Cir. 2002, dissent by Reinhardt). Likewise, a continuing shield under 40 C.F.R. §122.6 may in no event last more than five years, the term of a properly issued renewal permit under 33 U.S.C. §1342(b)(1)(B) and 40 C.F.R. 122.6. Permit #NM0000019 expired on April 6, 2006 and thus may only be administratively extended by EPA through April 6, 2011.

[1] A copy of the permit can be found at: http://www.epa.gov/region9/water/npdes/pdf/navajo/AZ-PublicServiceC0-permit.pdf.

EPA's attempt to administratively extend Permit NM000019 and the continuing shield beyond 5 years is illegal. EPA has refused to act for almost ten years, and by its inaction, attempted to allow APS and the other owners of the FCPP to receive not only the equivalent of one additional NPDES permits (until 2011), but the equivalent of two additional permits. In doing so, EPA has illegally ignored the plain language of Congress limiting the term of NPDES permits to 5 years. Permit NM0000019 became void by operation of law on April 7, 2011.

Claims against APS and the other owners of the FCPP

For the reasons stated above, SJCA and the Center claim that APS and the other owners of the FCPP are illegally discharging pollutants from the FCPP without a valid NPDES permit. As noted above, NPDES Permit No. NM0000019 expired on April 6, 2006. EPA does not have the legal authority to extend a NPDES permit for longer than 5 years. Therefore, APS and the other owners of the FCPP have been illegally discharging pollutants (including but not limited to Total Dissolved solids, selenium, temperature, Total Suspended Solids) from the FCPP (and its pipes, point sources and appurtenances) into navigable waters (including but not limited to No Name Wash, Chaco Wash, the San Juan River, and/or Morgan Lake) without a permit from April 7, 2011 to date. APS and the other owners of the FCPP are jointly and severally liable for civil penalties on each and every day it has discharged pollutants without a permit from April 7, 2011 to date. As noted above, APS and the other owners may not rely on a continuing shield defense because EPA is without authority to administratively extend NPDES Permit No. NM0000019 beyond five years.

Please contact me if you have any questions about this notice letter or if you would like to discuss resolution of this matter without protracted litigation.

Sincerely,

s/ John M. Barth

John M. Barth

cc: Mike Eisenfeld, SJCA
Michael Saul, The Center for Biological Diversity

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

June 26, 2014

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Harrilene Yazzi
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Navajo Regional Office
301 West Hill Street
P.O. Box 1060
Gallup, New Mexico 87305

Subject: EPA Comments on the Four Corners Power Plant and Navajo Mine Energy Project Draft Environmental Impact Statement, Navajo Nation, San Juan County, New Mexico (CEQ # 20140097)

Dear Mr. Calle:

The U.S. Environmental Protection Agency (EPA) has reviewed the above-referenced document pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act. Our detailed comments are enclosed.

The Draft Environmental Impact Statement (DEIS) assesses the impacts from the continued operation of the Four Corners Power Plant (FCPP), a coal-fired power plant with a generating capacity of up to 1,500 megawatts (2 units), should the Bureau of Indian Affairs (BIA) approve Arizona Public Service Company's proposed lease amendment and application for right-of-way renewals for operation through 2041. The project also involves continued and extended surface coal mining at the Navajo Mine, should the Office of Surface Mining (OSM) renew the Navajo Mine's existing Surface Mining Control and Reclamation Act (SMCRA) permit for 5 years and approve an application for a new SMCRA permit for the Pinabete Permit Area. Lastly, the project proposes right-of-way renewals by BIA for portions of four transmission lines.

EPA is a cooperating agency for the proposed project and provided comments on the Preliminary DEIS to the OSM and BIA on February 6, 2014. We found the DEIS to be largely responsive to our comments, and appreciate the changes made to the document to address them. Comments that were not fully addressed are reiterated in the attached Detailed Comments. Based on our review of the DEIS, we have rated the Preferred Alternative A as *Environmental Concerns – Insufficient Information* (EC-2) (see enclosed "Summary of Rating Definitions"). Our concerns regard the existing contamination of groundwater from coal combustion residue (CCR) disposal and the need for enforceable commitments regarding future CCR management, monitoring and remediation. We also have concerns regarding the

assessment of cumulative health impacts from continued operation of the project, given the severely compromised existing public health environment.

Pollutants from the disposal of CCR have contaminated groundwater at the FCPP. The DEIS includes a number of voluntary measures to be taken by Arizona Public Service (APS) regarding operations, design, groundwater monitoring, corrective action, and closure and post-closure of CCR disposal facilities at the FCPP. Because future regulations by EPA regarding CCR management may not apply on Tribal lands, we strongly recommend that the voluntary measures be incorporated as conditions of approval by the BIA in the event it approves APS's proposed lease amendment and application for right-of-way renewals. Groundwater contamination from past disposal of CCR in Navajo Mine has also occurred and we recommend monitoring of groundwater at the Navajo Mine to confirm the DEIS conclusions that constituents of concern would be attenuated as groundwater travels towards the San Juan River and the Chaco Rivers.

The DEIS concludes that that cumulative impacts to public health from both the FCPP and the Mine would be minor. Emissions of some pollutants from the power plant will be reduced as a result of EPA's Federal Implementation Plan - Best Available Retrofit Technology, and these reductions are expected to have a positive impact on public health. Nevertheless, as disclosed in the DEIS, health outcomes for Navajo, in term of life expectancy and mortality rates, are worse than for the general population in San Juan County, partly due to healthcare disparities. The cumulative health burden also includes the impacts from in-home burning of coal that is provided by the Navajo Mine to local tribal members free or at low-cost. This coal is often burned in improperly-vented stoves not designed to burn coal. Because many Navajo do not have access, or affordable access, to electricity, the provision of free or cheap coal by the project directly contributes to the cumulative health burden from indoor exposure to coal smoke. We recommend that the Final EIS incorporate the severely compromised existing public health environment into its cumulative health impacts assessment and include commitments to mitigation for the project's contribution to the ongoing environmental justice and cumulative health impacts. Please see the enclosed Detailed Comments for our recommendations regarding mitigation.

EPA appreciates the opportunity to review this DEIS and looks forward to continued coordination with OSM, BIA, and the other cooperating agencies during the NEPA process. When the Final EIS is released for public review, please send one copy to the address above (mail code: CED-2). If you have any questions, please contact me at (415) 972-3521, or contact Karen Vitulano, the lead reviewer for this project, at 415-947-4178 or vitulano.karen@epa.gov.

Sincerely,

Kathleen Martyn Goforth, Manager
Environmental Review Section

Enclosure: Summary of EPA Rating Definitions
EPA's Detailed Comments

cc: Ben Shelly, President, Navajo Nation
Stephen B. Etsitty, EPA Director, Navajo Nation
Herman Honanie, Chairman, Hopi Tribe
Gayl Honanie, Environmental Director, Hopi Tribe

SUMMARY OF EPA RATING DEFINITIONS

This rating system was developed as a means to summarize EPA's level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the EIS.

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

ADEQUACY OF THE IMPACT STATEMENT

Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions Impacting the Environment."

Coal Combustion Residue (CCR) Management and Contamination

CCR management at the Four Corners Power Plant

EPA expects to finalize the CCR rule by the end of 2014, which will determine whether CCR is managed as hazardous waste under Subtitle C of the Resource Conservation and Recovery Act (RCRA), as solid waste under Subtitle D of RCRA, or in some other manner. The DEIS indicates that CCR at the Four Corners Power Plant will be managed in accordance with this final EPA determination, and notes that, if EPA regulates CCR through Subtitle D, the authority to implement the regulations would be at the state level, which would not apply on tribal lands (p. 4.15-5). OSM proposes mitigation to address this regulatory gap, and we agree this is necessary. However, the DEIS identifies the mitigation measures as voluntary recommendations to Arizona Public Service, while also portraying them as if they were legal requirements. For example, on page 4.15-27, the DEIS states that both new and existing disposal units would be subject to groundwater monitoring requirements and, if certain hazardous constituents are detected at a level exceeding groundwater protection standards, the FCPP would have 90 days to assess corrective measures and select a remedy that would protect human health and the environment. It is not clear what groundwater protection standards are being referenced. The DEIS notes that the Navajo Nation does not have groundwater quality standards (p. 4.15-18). Additionally, the specific timeline and reference to corrective measures imply a rigorous enforcement program. The hazardous and solid waste mitigation measures on pages 4.15-31 through 4.15- 32 reference a "permit program" and "inspection requirements" and specify operating, design, groundwater monitoring, corrective action, and closure and post-closure requirements, but these "requirements" are simply recommendations to APS (*"OSMRE recommends APS implement the measures below"* – p. 4.15-31).

> *Recommendations:* The hazardous and solid waste mitigation measures presented on pages 4.15-31 through 4.15- 32 should be enforceable conditions of the project since it is a possibility that coal ash could be regulated under Subtitle D and the standards would not have an enforcement agency on tribal lands. We strongly agree with the need for the identified operating, design, groundwater monitoring, corrective action, and closure and post-closure requirements. Office of Surface Mining, Reclamation and Enforcement does not have a federal action at the FCPP, but the BIA is a cooperating agency and is using this EIS to inform its decision on the FCPP lease renewal. The hazardous and solid waste mitigation measures should be conditions of BIA's lease approval and enforceable through BIA's lease conditions and its NEPA Record of Decision. We recommend that they be identified as such in the Final EIS.

Contamination from past CCR mine disposal

Contamination from coal combustion residue (CCR) placed at the Navajo Mine has leached, and will continue to leach, directly into groundwater of the Fruitland Formation coal seams and the Pictured Cliffs Sandstone Formation. The DEIS acknowledges "*high levels of chemical constituents of concern exist within the wells in the historic mining area*" (p. 4.5-44). The DEIS concludes, however, that "*Thus far, negligible impacts have resulted from the CCR placement. It is also unlikely that any significant future effects will ensue from the CCR placement at the Navajo Mine because of the very slow groundwater movement and the likely attenuation of contaminants of concern as they migrate through the subsurface*" and that "*Therefore, past CCR placement at the Navajo Mine is determined to have no impact in the short- or long-term*" (p. 4.5-14). Elsewhere it states that the potential impacts to current and future water uses from CCR placement at the Navajo Mine are minor (p. 4.5-44), despite the identified major impacts for pH, boron, selenium, fluoride and sulfate (p. 4.5-44), with concentrations of

boron, fluoride, sulfate, and total dissolved solids (TDS) exceeding the criteria for livestock watering, a designated post reclamation land use.

These conclusions, especially that of "no impact", do not appear to be supported. The modeling assumption that contaminants would be attenuated as they migrate through the subsurface has not been confirmed[1]. Additionally, the assumption that pollutants would be diluted by the larger San Juan River groundwater flow, even if they are not attenuated during transport to the Fruitland Formation, is brought into question since the transport modeling and sampling that occurred seems to have not fully recognized the possibility of a significant vertical (fracture) flow in the Fruitland Formation. The DEIS indicates that the general flow direction of groundwater in the Fruitland Formation is downward through the interbedded shale and coal units to the lower strata of the Fruitland Formation, with marginal upward movement from the Pictured Cliffs Sandstone into the Fruitland Formation (p. 4.5-13). One can infer from the vertical flow directions that fracture flow might play a prominent role in the movement of bedrock groundwater in the FCPP area[2]. This parameter was not considered in the groundwater modeling of the FCPP area. If vertical (and lateral) fracture flow is substantial, the assumed attenuation would not occur because fracture flow results in a much smaller residence time of groundwater in the bedrock formations and a limited opportunity for the contaminants to be adsorbed by bedrock clay. This would lead to a potentially larger groundwater impact downgradient of CCR placement than is predicted in the DEIS.

The DEIS is not clear whether any ongoing groundwater or surface water monitoring would occur as a condition of this project. The DEIS seems to indicate that only groundwater and surface water monitoring that are part of the new SMCRA permit groundwater monitoring plan (originally from BHP Navajo Coal Company, but which the Navajo Transitional Energy Company will implement) would occur, which relates to the new mine areas and the Pinabete and Cottonwood arroyos. It does not specify any monitoring of the historic contamination areas nor confirm that contaminated groundwater is not reaching the San Juan or Chaco River surface water or alluvia.

> *Recommendation:* The FEIS should include additional information to support its groundwater and surface water impact assessment conclusions. We recommend that monitoring of groundwater quality at Areas I and II of the Navajo Mine and the San Juan River alluvium occur to confirm the model predictions that constituents of concern would be attenuated as

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[1] The DEIS references the "Cumulative Hydrologic Impact Assessment of the BHP Billiton Navajo Coal Company, Navajo Mine" for this assumption, but this assessment is not summarized nor appended to the DEIS.

[2] Wilson, T.H. et al., (2012): "Fracture and 3D seismic interpretations of the Fruitland Formation and cover strata: Implications for CO_2 retention and tracer movement, San Juan Basin Pilot test". *International Journal of Coal Geology*, Volume 99, 1 September 2012, Pages 35–53. http://www.sciencedirect.com/science/article/pii/S0166516212000432

McCord, J. et al., (1992) "Heat-flow data suggest large ground-water fluxes through Fruitland coals of the northern San Juan basin, Colorado-New Mexico", *International Journal of Coal Geology*, v. 20 no. 5, 1992, p. 419-422. http://dx.doi.org/10.1016/j.coal.2012.02.007

Haerer and McPherson (2008) "Evaluating the impacts and capabilities of long term subsurface storage in the context of carbon sequestration in the San Juan basin, NM and CO". *Energy Procedia*, Volume 1, Issue 1, February 2009, Pages 2991–2998. Proceedings of the 9th International Conference on Greenhouse Gas Control Technologies (GHGT-9), 16–20 November 2008, Washington DC, USA. http://www.sciencedirect.com/science/article/pii/S187661020900719X

groundwater travels towards the San Juan River and the Chaco River. Because the groundwater of the Fruitland and Pictured Cliffs Sandstone formations that enter into the alluvium also discharges into the San Juan River in the area of the Navajo Mine, monitoring of the San Juan River surface water quality upstream, along the mine reach, and downstream should occur if the groundwater monitoring results identify elevated levels of pollutants in the San Juan River alluvium that exceed Navajo Nation Water Quality Standards.

In addition, the baseline groundwater quality should be clarified. The DEIS summarizes baseline results for Cottonwood, Pinabete, and No Name Arroyo alluvial wells in Table 4.5-5; however the presentation of this information is not useful. EPA previously commented that this summary does not allow an assessment of ground water impacts by source, and we recommended including some monitoring results by well in the DEIS. In addition, the identification/location of these baseline wells is of importance in order to confirm they do, indeed, represent baseline conditions and do not include contamination that is related to past CCR disposal. This information should be included in the FEIS.

Monitoring for CCR contamination from Four Corners Power Plant

The DEIS reports two areas of groundwater seepage at the existing Dry Fly Ash Disposal Areas (DFADAs) known as the "north seep" and "south seepage area", which have contaminated groundwater (p. 4.5-57). According to the DEIS, APS has installed extraction wells and constructed the north intercept trench to collect seepage and prevent contamination of the Chaco River, and is currently constructing a south intercept trench to remediate groundwater to protect the river. The DEIS does not indicate how the groundwater is being remediated. With this action and the monitoring of the existing trenches, the DEIS concludes that continued operation and expansion of the DFADAs would have less potential to contaminate local groundwater and water quality in Chaco Wash (p. 4.5-57).

We believe that such actions to capture and treat contaminated groundwater are necessary to ensure that the continued operation and expansion of the DFADAs does not contribute significantly to the existing pollutant load in the Chaco River. The operation of the intercept trenches, as well as the monitoring of groundwater in existing and, possibly, new monitoring wells, is critical to ensuring that any pollutant sources present in ground water that re-surfaces via seeps can be traced so that appropriate corrective actions can be undertaken.

Recommendation: We recommend that any FCPP lease renewal by the BIA include conditions requiring the continued monitoring and remediation of groundwater at the DFADAs. We also recommend that the FEIS identify the method of groundwater remediation that is occurring or will occur.

Dam Safety

We appreciate the information in the DEIS that states that all recommendations from the 2009 Coal Ash Impoundment – Site Specific Assessment Report for the FCPP were completed in 2009 (p. 4.14-4). On p. 4.15-22, however, the DEIS states that APS indicated that the suggested items would be addressed and completed prior to the end of 2009. The DEIS specifically identifies some of the recommendations, but does not indicate whether the following are occurring: (From section 12.4 of the recommendations):

- Continue monitoring seepage at the downstream toe of the south embankment (Pond #4 toe) for any changes in seepage quantity and flow rate or evidence that the flow is carrying soil/ash particles from the embankment.

- Expand program to include additional monitoring of potential seepage under the dam at the northwest corner of the LAI, where the LAI embankment was not tied-in to the underlying Pond 3-4 embankment to provide continuity of seepage control, and where a potential seepage pathway exists if the HDPE lining fails. Install additional piezometers to address this potential seepage pathway and expand documentation in APS dam safety inspections to note any evidence of seepage near the downstream toe of the dam in this area.
- Repair or replace the two settlement plates that do not appear to be providing useful information and that may have been damaged during construction or maintenance activities.

Recommendation: For clarity in the FEIS, indicate whether the above recommended actions and monitoring from the 2009 Coal Ash Impoundment – Site Specific Assessment Report for the FCPP are occurring. If the requested monitoring has occurred, include results of seepage monitoring efforts.

Dust Control from CCR Management

The DEIS provides information regarding the FCPP Dust Control Plan. The DEIS states that, *"During placement of CCR, compaction control, added moisture, and slope control are used, as well as dust suppressant and periodic fabric covering of slopes"*. The DEIS states that DFADA 1 and 2 will continue to be used until they reach capacity in 2016. DFADA 1 is tallest on the west berm, approximately 110 feet above natural grade (p. 4.15-12). The DEIS also states that APS would construct five additional DFADAs to accommodate future disposal of all fly ash, bottom ash, and flue gas desulfurization waste generated through the duration of the lease term. Each site is anticipated to be approximately 60 acres and approximately 120 feet high (p. xiii and p. 3-15). On page 4.15-27, the DEIS states that the new DFADA's would be approximately 80 feet high, so it is not clear which height represents the height above natural grade.

If the height of the DFADAs will be 120 feet above natural grade, to the extent there is any settlement in the down-wind directions, fugitive dust control on such a high active face would be difficult to maintain. EPA has received complaints from nearby residents regarding fugitive dust, therefore renewed efforts at dust control, and monitoring of dust control effectiveness, is essential.

Recommendation: Clarify in the FEIS whether the height of the DFADAs will be 80 feet or 120 feet above natural grade. For either height, we recommend that the DFADAs be continuously sprayed with water to ensure dust is controlled. Slope control and the other dust control measures in the Dust Control Plan should be monitored regularly to ensure they are effective. When wind speeds are elevated, more frequent dust control should be implemented.

We recommend that a dust complaint procedure and hotline be developed to allow local residents to report ineffective dust control conditions. APS should conduct outreach to the local population, in Navajo as well as English, to ensure awareness of this complaint procedure.

Cumulative Health Impacts

The EIS should acknowledge the cumulative health impacts that the residents in the vicinity of the project experience. The DEIS largely relies on the air quality analysis conclusions for its public health impact assessment. The DEIS states that the combined impacts to air quality from the Navajo Mine and the Four Corners Power Plant (FCPP) are minor (p. 4.1-85) because modeled criteria pollutant emissions meet the National Ambient Air Quality Standards (NAAQS). EPA sets the NAAQS at a level requisite to protect public health with an adequate margin of safety, taking into consideration effects on

susceptible populations, based on the scientific literature; however, as we previously commented, EPA's Particulate Matter and Ozone Integrated Science Assessments (U.S. EPA, 2009 and U.S. EPA, 2013) determined that there is no evidence of a population-level threshold in PM- and ozone-related health effects in the epidemiological literature. This means that there is not a level below which is there is no impact. Instead, health impacts that occur below the standards are assumed to be more uncertain than those occurring above the standards.

The DEIS acknowledges that the cumulative public health effects depend on the respiratory health status of residents in the area (p. 4.18-54), yet it does not appear that respiratory health was considered in the conclusions that project impacts to public health from the FCPP are negligible for criteria pollutants (p. xli, p. 4.17-22) and minor for hazardous air pollutants (p. p. 4.17-24), and that cumulative impacts to public health from both the FCPP and the Mine are minor (p. 4.18-54). The DEIS does disclose San Juan County's most recent Community Health Profile, which found that San Juan County has a higher incidence of chronic lower respiratory disease, comprised of chronic bronchitis, asthma, and emphysema, compared to New Mexico or the rest of the United States. It also cites a study by the New Mexico Department of Health that found that San Juan County residents are 34 percent more likely to have asthma-related medical visits after 20 parts per billion increases in local ozone levels (p. 4.17-4). A study by Bunnell, et al, also cited in the DEIS, documents disproportionately high rates of respiratory disease in the Indian Health Service's Shiprock Service area (p. 4.11-14). None of this information appears to have been factored into the DEIS' conclusions regarding cumulative public health impacts.

The DEIS also discusses the unique situation of in-home coal burning from coal provided free of charge to Navajos who reside within a certain radius of the mine, which was part of the original mining lease agreement. The DEIS states that, from October through March, coal for personal use by project employees and local Chapter residents is placed in the Community Coal Stockpile, located adjacent to the Navajo Mine Area III office (p. 2-12). Because many Navajo are able to obtain cheap or free coal, and they do not have access, or affordable access, to electricity – an existing environmental justice vulnerability -- many use coal to heat their homes. It is not unusual for the coal to be burned in stoves that were not designed to burn coal, nor is it unusual that the stoves are poorly maintained or improperly vented. The Bunnell study revealed that air quality from coal combustion inside dwellings used for cooking and heating had an average 24-hour wintertime $PM_{2.5}$ level exceeding EPA's ambient air standard for $PM_{2.5}$ (note that EPA does not regulate indoor air pollution levels). This cumulative impact, which directly relates to the mine operations for which this EIS is being prepared, should be considered in the cumulative public health impact conclusions, as well as referenced in the environmental justice impact conclusions.

> *Recommendation:* We recommend that the cumulative public health impact assessment conclusions factor in the respiratory health status of residents in the area, as the DEIS states should occur on page 4.18-54. The FEIS should document how the lack of access to electric power and the provision of free or low-cost coal by the project have contributed to indoor air quality cumulative impacts, as well as outdoor air pollution during stagnant winter weather conditions. Because the DEIS does not define what would constitute a moderate or major impact to cumulative public health and does not define a level of significance, we recommend identifying mitigation measures for this impact, since the existing public health environment is severely compromised (health outcomes for Navajo are worse than for the general population in San Juan County; life expectancy is lower, mortality rates far exceed the national rates; investment in healthcare services on Navajo land is about half of that for the general population; and healthcare disparities between Navajo and the general population are pronounced due to lack

of access and funding - p. 4.10-15). The DEIS notes that the results from the Bunnell study suggest that the added risk from in-home coal burning could be reduced by making relatively simple and inexpensive changes to methods of home heating (p. 4.17-4). Such changes should be further discussed and identified as possible mitigation for this cumulative public health and environmental justice impact.

EPA previously recommended mitigation for cumulative impacts from in-home coal combustion supplied by the continued operation of the mine. At a minimum, the following potential mitigation measures should be identified and considered: funding for replacement of old stoves with more efficient stoves appropriate for the fuel types being used; funding for replacement of old coal and wood stoves with propane gas heaters; assistance to the affected community for residential solar, wind or other electrical generation projects; assistance to Navajo Tribal Utility Authority for local electricity connections and subsidies to any affected residents; and education on how to properly operate, vent, and maintain existing stoves, perhaps locating this information in Navajo at the Community Coal Stockpile or producing an instructional video to play in Indian Health Service clinic waiting rooms. Selection of any of the above measures should be done in consultation with the affected residents.

Excluding Fugitive Dust from the Human Health Risk Assessment (HHRA)

EPA previously commented that fugitive dust should have been included in the Human Health Risk Assessment and that uncertainty regarding the assumption of equal toxicity of PM species does not warrant the exclusion of fugitive dust from the impacts analysis (on the basis of having a lower proportion of metals and other toxic substances). OSM has chosen, instead, to include a discussion of potential impacts from $PM_{2.5}$, including baseline and projected future emissions.

Recommendation: We recommend that the FEIS clearly state that fugitive dust was not included in the HHRA.

Potential for Mine Methane Capture

The DEIS quantifies the fugitive methane emissions that would be liberated from coal seams during mining (p. 4.2-22). Methane has a global warming potential more than 20 times higher than CO_2 for a 100-year period[3]. Methane can be captured at surface mines through pre-mine drainage, either from the surface or through horizontal boreholes. EPA is aware that there are surface mines in operation in the Powder River Basin in Wyoming and elsewhere around the world that are recovering methane through pre-mine drainage and, thus, mitigating the impact from this powerful greenhouse gas. Also note that surface mine methane capture is now eligible for carbon credits - a market tracking system that supports the implementation of California's Cap-and-Trade Program - for greenhouse gas emission reductions associated with the capture and destruction of methane in the U.S. that would otherwise be vented into the atmosphere as a result of mining operations at active underground and surface coal mines. See: http://www.arb.ca.gov/newsrel/newsrelease.php?id=602. In addition, the DEIS states that BIA is currently evaluating, under NEPA, Western Oil & Gas's proposal to develop 600 natural gas wells in the Burnham, Upper Fruitland, and Nenahnezad/San Juan Chapters, which would involve the installation of new pipeline (p. 4.18-13).

[3] http://www.epa.gov/climatechange/ghgemissions/gases.html

Recommendation: We recommend that the FEIS discuss the feasibility of capturing methane from Navajo Mine. Include the economic benefits that could occur from selling the carbon credits in California's Cap-and-Trade Program, as well as the possible interconnection or use of natural gas infrastructure nearby from Western Oil & Gas's proposed natural gas wells.

Additional information regarding methane recovery at surface mines is available in the following EPA documents:

- "Case Study – Methane Recovery at Surface Mines" - http://epa.gov/coalbed/docs/CMOP-Methane-Recovery-Surface-Mines-March-2014.pdf
- "US Surface Coal Mine Methane Recovery Opportunities" - http://epa.gov/coalbed/docs/cmm_recovery_opps_surface.pdf

Petroleum Contamination

The DEIS states that "*Secondary containment is not provided for mobile refueling vehicles in areas where NTEC staff are present, and the maximum amount of time before a discharge would be detected is less than 24 hours*" (p. 4.15-6). It is unclear why it could take hours before a discharge from mobile refueling is detected. The DEIS states that the bioremediation of petroleum-contaminated soils takes place on-site (p. 4.15-6). The source of this contaminated soil is not identified.

Recommendation: The FEIS should identify the source of the petroleum-contaminated soils and indicate whether they are originating from mobile refueling operations. We recommend that the applicant review and, as needed, update its Spill Prevention, Control, and Countermeasure (SPCC) Plan to identify applicable general containment or drainage control measures, as required by 40 CFR 112.7(c) for mobile refuelers and mobile refueling, to ensure that releases associated with these operations are detected as soon as possible. For the continued operation of the FCPP and Navajo Mine, we recommend that additional measures be explored to prevent and contain releases when mobile refuelers may be unattended and during mobile refueling operations.

Additional comments

- Table 4.1-28 on p. 4.1-67 is confusing. The second column is labeled "Estimated Post-2014 Baseline Emissions", but it is not clear what is meant by post-2014 emissions. The text says that the reductions in the third column represent the reductions from fully implementing BART, but our estimate for mercury reductions under BART implementation is 61%, not the 81% listed. It is possible that the table is intended to represent the additional reductions in mercury that could occur from implementation of the mercury and air toxics standards (MATS). If so, this should be clarified in the FEIS and a definition of "Post-2014 Baseline Emissions" should be provided.
- In Table 4.5-6 on page 4.5-20, the result for mercury is listed as >0.001. Should this have been <0.001?
- In the Hazardous and Solid Waste chapter, the PDEIS states that "specific study of the disposal of CCR in Navajo Mine has not identified adverse effects" (p. 4.15-5). This does not appear to be supported, given the contamination identified in the Water Resources chapter. Groundwater contamination is an adverse effect.